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Tuberculous Bacilluria.—The urine of 30 patients with advanced cavernous tuberculosis of the lungs was examined for tubercle bacilli for a period of over three years. Twenty patients died and came to autopsy. In 5 cases with positive urine findings during life, tuberculous lesions of the urinary tract were found. In 4 cases tuberculous lesions were found in spite of persistently negative urinary findings during life. In 10 cases the examinations during life and the pathological findings were negative. In 5 cases with positive findings during life, no tuberculous lesions were found at autopsy. Histological examinations were based on careful studies of serial microsections of the renal papillae and of the pyramids. In connection with this examination bacillemia was induced experimentally in rabbits by intravenous injection of suspensions of tubercle bacilli. The twenty-four-hour urine of the animals was collected and cultures of an egg-asparagin smear were inoculated into guinea pigs. While tubercle bacilli were present in the blood of a series of these infected animals, bacilli could not be recovered from the urine. Histologically the kidneys proved to be negative. The authors conclude that tubercle bacilli may pass through the kidneys of patients with pulmonary tuberculosis at the terminal stage of the disease even in the absence of local renal lesions.—*Bacilluria tuberculosa, M. F. Magarao, P. F. de Albuquerque & C. de Paz, Jr., Rev. méd. munic., March, 1943, 5: 253.*—(*F. G. Kautz*)

Tubercle Bacilluria.—The problem of the filtrability of tubercle bacilli through the normal kidney is an old one and experimental results are controversial. The author induced diuresis in rabbits and, following the intravenous injection of tubercle bacilli, was able to demonstrate, by subsequent injection of guinea pigs, that 33 per cent of the rabbits' urines collected twenty to thirty minutes after the injection of bacilli contained tubercle bacilli. Filtrability of tubercle bacilli through the normal kidney of a rabbit is therefore possible, provided, however, that the bacillemia is of a certain degree and the kidneys are in a state of hyperfunction and provided also that the bacilli are looked for shortly after the onset of the bacillemia. If confirmed for men, these findings may be significant, in as far as they may indicate that tubercle bacilli may be found in the urine, although no specific involvement of the kidneys exists.—*Dimostrazione della filtrabilita del bacillo di Koch attraverso il rene sano durante poliuria sperimentale, A. Rubino, Riv. di tisiol., 1940, 13: 459.*—(*G. Simmons*)

Tubercle Bacilluria.—Tubercle bacilli cannot pass the intact kidney. Systematic examinations show that minute foci of caseation can be found in the kidneys of patients dying of tuberculosis of the lungs who never manifested tuberculosis of the genito-urinary tract. These lesions are usually located in the glomeruli. Small scars are also frequently encountered at autopsy of tuberculous patients, adding weight to the contention that renal lesions are rather frequent but usually heal. Children with tubercle bacilluria always have positive tuberculin reactions. They

frequently have cervical lymph node enlargement indicating that the lymphatic barrier has been passed. Renal tuberculosis is due to both bovine and human tubercle bacilli. Although most renal lesions undoubtedly heal without specific treatment, sanatorium treatment, tuberculin ointment and vitamin C are advised for children. A common symptom of renal tuberculosis in children is enuresis. This disappears with the improvement in the kidney condition and as the general condition improves the bacilluria disappears.—*Tubercle Bacilluria, Annotation, Lancet, July 1, 1944, 257: 22.*—(*H. Marcus*)

Mode of Tuberculous Infection.—Ninety per cent of tuberculosis is contracted by means of inhalation. Droplet infection does not play a large rôle in this connection. Inhalation of dust containing dried tubercle bacilli seems to cause the majority of cases. The larger droplets, if inhaled, seem to cause those rare cases of tuberculosis of the pharynx and tonsils. Droplets rarely reach the lung. Bovine tubercle bacilli are fully as virulent for humans as the human strain, but usually cause disease in extrapulmonary locations. In countries where the destruction of tuberculous cattle is not obligatory, a higher percentage of cases is caused by bovine bacilli, and the source of tuberculosis is, therefore, found in the gastrointestinal tract.—*Wie bekommt der Mensch eine Infektion mit Tuberkelbazillen?, A. Gigon, Schweiz. med. Wchnschr., May 13, 1944, 74: 532.*—(*H. Marcus*)

Blood Calcium in Tuberculosis.—The values of the concentration of serum calcium in normal Bengali male adults were found to vary very little. The average calcium content in the serum in early and advanced pulmonary tuberculosis fails to show any significant variation from that of the normal blood. In some advanced cases with high temperatures the calcium level was decreased. This probably was due to increased adrenalin released during the fever or to extreme loss in the stools in the presence of diarrhea. In various types of tuberculosis of the bones and joints with destructive or atrophic lesions there was neither hypercalcemia nor hypocalcemia.—*A Study of Blood Calcium in Tuberculosis, S. K. Sircar & B. Lahiri, Indian M. J., August, 1943, 37: 114.*—(*F. G. Kautz*)

Plasma Lipase in Tuberculosis.—In at least 5 papers the problem of the relationship between the plasma lipase and course of pulmonary tuberculosis is being studied. So far the importance of the lipase was considered because it was thought that this enzyme may be able to destroy the fat capsule of tubercle bacilli. There is, however, no relation between the form and gravity of the disease and the absolute value of the plasma lipase. The lipase circulating in the blood is not one definite substance, but a mixture of different lipases, elaborated in and eliminated by different organs. A study of the lipase content of the plasma, therefore, may give information as to the metabolic activity of certain organs, if studied repeatedly over a prolonged period of time. The metabolic activity, on the other hand, may be considered indicative of the resistance of the diseased organism toward tuberculosis. The common laboratory methods for the determination of lipase being unsuitable for large scale studies, the author developed a special technique, which is less time consuming. More than 30 determinations can be done with his method during one morning and the amount of blood required for each test is 2 cc. Studying the plasma lipase in about 80 patients with pulmonary tuberculosis over several months, repeating the test once a month, it was found that there is a definite relationship between the course of the disease and the progressive changes in the lipase content of the blood. An increase of the lipase goes parallel with an increasing bodily resistance and an improvement of the pulmonary condition, whereas a progressive decrease is indicative of failing resistance and of poor prognosis. The lipase being in relation with the intensity and orientation of the general metabolism and the sedimentation rate corresponding to the degree of intoxication of the organism, both the lipase and the

sedimentation rate are determined in order to better evaluate the progress of the disease. The following combinations are possible: (*1*) High lipase content with normal sedimentation rate. This is the group of patients with high resistance and inactivity of the pulmonary process. (*2*) Low lipase and high sedimentation rate, the resistance is low and the lesions are very active. (*3*) High lipase and high sedimentation rate, both resistance and activity of the disease are great. (*4*) Low lipase and low sedimentation rate. This is the group of patients in whom, despite satisfactory collapse, the general condition does not improve once it is poor. Whereas one single determination of the lipase has no importance, the study of changes in the concentration of this enzyme in the blood, together with a study of the changes in the sedimentation rate, has proved to be of great prognostic importance and is being routinely used in one of the largest sanatoria in Italy. According to Scholz lipase is able to hydrolize the fat capsule of the tubercle bacillus and the variations in the lipase content of the blood are parallel to those in the lipase content of the diseased organs. The same author believes that ascorbic acid is the agon of the esterases and that intake of ascorbic acid causes an increase in the lipase content of the plasma. Scoz has repeated the experiments and arrived at the conclusion that ascorbic acid has no direct relation to the lipase of the blood.—*Le lipasi del plasma nei malati di tubercolosi polmonare, Nota 1: Introduzione; Nota 2: Metodo di determinazione titrimetrica; Nota 3: La lipasi del plasma nei malati di tubercolosi polmonare; Nota 4: Influenza dell' acido ascorbico, G. Scoz, Riv. di tisiol., 1941, 14: 221 and 253.*—(*G. Simmons*)

Nicotinic Acid in Tuberculosis.—Nicotinic acid has proved valuable in the treatment of severe diarrhea of patients with pulmonary tuberculosis. Diarrhea and other gastroenteric disturbances of long standing disappeared rapidly in 16 out of 30 patients. It is assumed that nicotinic acid is useful whenever diarrhea is not caused by specific intestinal disease but is due to toxemia, eventually resulting in avitaminosis.—*L'acido nicotinico nella cura della diarrea degli ammalati di tubercolosi polmonare, G. Chiti, Riv. di tisiol., 1941, 14: 415.*—(*G. Simmons*)

Vitamin K during Hemoptysis.—The coagulation time is prolonged in 90 per cent of patients with pulmonary hemorrhage; the prolongation in 28 per cent of them was so considerable (up to 100 per cent) that it was probably an important cause for the hemoptysis. The intake of synthetic vitamin K causes almost invariably the return to normal of the coagulation time, but this effect persists only as long as the vitamin is being taken. Although "the treatment (with vitamin K) is frequently followed by the disappearance or the attenuation of the hemoptysis," in some cases the hemorrhage starts in patients in whom the coagulation time is normal or had been made normal previously.—*Sui primi 36 casi di emottisi tubercolare trattati con vitamina K, G. Scoz & L. Castaldi, Riv. di tisiol., 1940, 13: 314.*—(*G. Simmons*)

Vitamin K in Tuberculosis.—Prolongation of the prothrombin time is seen only in a relatively small percentage of sanatorium patients with tuberculosis. The cases that do show prolongation are generally those with active disease, often with gastrointestinal involvement. Out of 58 cases, 16 per cent showed a prolongation. Patients with massive hemorrhage do not, as a rule, show abnormal prolongation of prothrombin time, but among 6 patients with minor pulmonary bleeding 3 had abnormally long prothrombin times. Drop in the blood prothrombin content is seen regularly after operation on tuberculous patients, and this drop cannot be influenced by the administration of vitamin K pre- or postoperatively. In general, prothrombin values in tuberculosis are approximately the same as in normal people and no definite value of vitamin-K therapy in tuberculosis has been established.—*Untersuchungen über das Vitamin K bei Tuberkulose, E. Tanner & F. Suter, Schweiz. med. Wchnschr., May 20, 1944, 74: 552.*—(*H. Marcus*)

Plasma Globulin and Sedimentation Rate.—Studying changes in the concentration of globulin of the blood plasma and the erythrocyte sedimentation rate over a long period of time in patients with different forms of pulmonary tuberculosis, showed that the globulins do not influence the sedimentation rate.—*Velocita di sedimentazione del sangue e concentrazione delle globuline del plasma, G. Scoz & A. Guzzi, Riv. di tisiol., 1943, 16: 3.—(G. Simmons)*

X-rays and Sedimentation Rate.—The sedimentation rate in patients with pulmonary tuberculosis shows variations according to the patient's physical activity, showing a decrease in those cases in which the evolution of the disease is favorable and showing an increase in cases of progressive tuberculosis. X-rays applied to the region of the spleen cause similar changes of the sedimentation rate. Both a standardized physical exercise and exposure to a definite amount of X-rays were used in a group of 25 patients for prognostic purposes and to determine the amount of work these patients may be permitted to perform. Both tests gave parallel results and it is believed that the X-ray test may be of value for the diagnosis and prognostication of pulmonary tuberculosis.—*Influenza delle irradiazioni roentgen sulla curva sedimentrica, A. Jaccariono, Riv. di tisiol., 1942, 15: 114.—(G. Simmons)*

Respiratory Centre and Hydrogen Ion Concentration.—The ability to compensate for a gradually increasing acidosis due to intravenous injections of hydrochloric or lactic acids was tested in anesthetized dogs deprived of their chemoreceptor reflexes by denervation of the carotid sinus region and by section of both vagus nerves. Test of the ineffectiveness of the chemoreceptor reflexes was made by finding that the usual hyperventilation due to breathing oxygen of low tension was replaced after denervation by a depression. Results in all experiments were similar. The existing acidosis, as shown by the lowering of the bicarbonate concentration of arterial blood, was compensated for by increased ventilation and a consequent lowering of the CO_2 tension of arterial blood, the latter being in inverse proportion to the volume of ventilation. The compensation may be efficient enough to maintain the pH of arterial blood constant at least within ± 0.01. As the chemoreceptors in the experimental animals were ineffective, we will have to accept the respiratory centre as the regulatory mechanism, unless we invoke some other unknown mechanism, and therefore the respiratory centre must be sensitive to changes in hydrogen ion concentration at least as small as pH 0.01. A speculative hypothesis is presented. It postulates the existence in the respiratory centre of two mechanisms, one that would originate impulses under the stimulus of increased hydrogen ion concentration, while a second would respond to afferent reflex impulses. These mechanisms might act both independently and additively and might be found either in the same or in separate cells. (Author's Summary.)—*The Sensitivity of the Respiratory Center to Hydrogen Ion Concentration, M. G. Banus, H. H. Corman, V. P. Perlo & G. L. Popkin, Am. J. Physiol., August, 1944, 142: 121.—(G. C. Leiner)*

Artificial Respiration.—This study comprises an experimental attempt to determine which methods of artificial respiration are more efficient. The aim of all methods of artificial respiration is the maintenance of respiratory exchanges in the nervous system. For this, two fundamental requirements must be fulfilled: (*1*) adequate pulmonary ventilation; and (*2*) transport of respiratory gases from air to the lungs. Thus the fundamental fact to be considered is the assessing of the value of oxygen which can be transported to and used by the tissues. In this study dogs prepared, either by spinal transection between the first and second cervical segments or deeply anesthetized with nembutal so that the medullary centres were inactive, were used. In either method, artificial respiration was maintained by a pump except when manual methods were being investigated. The two methods studied were the traditional

abdominal pressure respiration of Schafer and the newer "rocking method." In the latter, after the dog is firmly strapped to a board, rocking is carried out symmetrically about a horizontal axis through the centre of the board. A rate of 8 to 10 respirations a minute was made with constant velocity. Using these methods, the rates of oxygen-intake, tidal air, ventilation volume, arterial blood pressure and cardiac output were measured. Although tidal air and ventilation by the Schafer method were only about 50 per cent of those with the rocking method, there was little difference in the rate of oxygen-uptake. The authors conclude from this that the ventilation factor is not the important one in assessing the oxygen-uptake, but that the cardiac output is a rather important factor. It is further concluded that the rate of oxygen-uptake and the cardiac output are greater with the rocking method than with the Schafer; the oxygen tension of the venous blood is higher. Despite the apparent greater efficiency of the rocking method over the Schafer method, the authors agree that the latter method should be immediately instituted when resuscitation is undertaken and no time should be lost while preparations are being made for the use of any other method.—*An Experimental Study of Different Methods of Artificial Respiration, A. Hemingway & E. Neil, Brit. M. J., June 24, 1944, 1: 833.*—(*D. H. Cohen*)

Hyperpnea of Muscular Exercise.—Among the earliest explanations proposed for the control of respiration was that of Volkmann in 1841 and Vierordt in 1844, who believed that respiration was regulated chiefly by means of reflexes. One hundred years later this explanation again seems to be satisfactory though resting now on far firmer experimental support. In the intervening years all theories dealing with the control of respiration were concerned chiefly with the dominant effect of chemical substances acting directly upon the medullary centres. Probably the most important discovery of the last century—more important than the finding of any new reflex or chemical stimulant—has been the realization that respiration is controlled not by reflexes alone, not by chemical stimulation of the medulla alone, but by the proper interaction of both factors. No reflex, no matter how strong, can stimulate respiration if the arterial CO_2 tension has been lowered abnormally; no chemical stimulant, no matter how great, can produce rhythmic breathing if the medullary centres have been completely cut off from all nervous influences including that residing in the pneumotaxic centre. Respiratory alterations in general, and the hyperpnea of exercise in particular, cannot be explained by any single simple theory but only by a consideration of a number of known and probably many unidentified factors. (Author's Summary).—*The Hyperpnea of Muscular Exercise, J. H. Comroe, Physiol. Rev., July, 1944, 24: 319.*—(*G. C. Leiner*)

Lung Expansion.—Measurement of the vital capacity by means of the spirometer is a valuable test to determine the breathing capacity of recruits. Because of the difficulty in transporting spirometers a simple way of determining lung expansion with the help of a few measurements has been devised. The total increase in the volume of the trunk in inspiration is a fair measure of vital capacity, and it is therefore termed lung expansion. It is assumed that the upper part of the chest is a cone, with its apex at the suprasternal notch, and its base at the level of the nipples. The abdomen from the umbilicus to the symphysis pubis is a similar cone. The parts from the nipples to the xyphoid and from the xyphoid to the umbilicus are truncated cones. Each cone is a quarter of the length of the trunk. The important measurements are circumference of the chest at the nipple line (a), circumference of the chest at the xyphoid (b), circumference at the umbilicus (c), and length of the trunk from the suprasternal notch to the symphysis pubis (L). The volume of the trunk then equals $\frac{L}{48\pi}\left(2a^2+2b^2+2c^2+ab+bc\right)$. Tables have been constructed to show the expression

$\frac{L}{48\pi} 2X^2$ for all values of adult trunk measurements so that the total volume can be easily calculated from adding these expressions. The mean probable error in the method is 8.7 per cent, and the values closely resemble measurements of vital capacity by means of the spirometer. This method was applied to the testing of recruits before and after training. The recruits were subdivided into four groups for this purpose: the athletic group, the active group, the never active men and the effort intolerant men. It is most convenient to express the findings in terms of volume per square meter of body surface. From the results it appears that any man having 1,900 cc. of lung expansion per square meter of body surface should be capable of the exertion required of a front-line soldier. If the lung expansion is less than 1,100 cc., the soldier is incapable of such efforts. It was found that some men with expansions of less than 1,800 cc. improved their expansion to a value above this in the course of training and passed the required endurance test. Some men with values slightly below this passed the test after training without, however, improving their expansion. The bulk of the men who passed the test had expansions of 1,800 cc. or above. It is concluded that measurement of lung expansion and relating it to the body surface is a valuable adjunct in estimating a man's capacity for infantry training.—*Calculation of Lung Expansion, H. K. Goadby, Lancet, September 23, 1944, 247: 415.*—(*H. Marcus*)

Pulmonary Permeability in Pulmonary Tuberculosis.—This paper is based upon an earlier communication by Knipping who developed a method for the determination of functional pulmonary insufficiency caused by a disturbed pulmonary permeability. In a normal individual the margin of safety is sufficiently large, so that exposure to air containing more or less than 21 per cent of oxygen does not produce any change in the absorption of oxygen during rest, as well as during exercise. In patients, however, in whom the permeability is decreased and who, therefore, are in a state of more or less latent anoxia, exposure to an increased concentration of oxygen leads to an increased absorption of this gas. This latent anoxia, furthermore, may be enhanced and made evident by reducing the oxygen content of the inspired air-mixture. The author believes that changes in the absorption of oxygen thus obtained are a good indication of the damage of the pulmonary permeability and he is inclined to consider it in the evaluation of the clinical-pathological picture, as well as in the estimation of work that the patient may be allowed to perform safely. A simple apparatus is described which enables the author to produce and maintain a certain concentration of oxygen for the duration of this functional test.—*Esame della permeabilita pulmonare nei malati di tubercolosi polmonare, G. Scoz, Riv. di tisiol., 1940, 13: 333.*—(*G. Simmons*)

Red Cells under Various Oxygen Tensions.—This is another study designed to produce or make evident a state of respiratory insufficiency in patients with pulmonary tuberculosis in order to obtain an idea of the degree of the disturbed pulmonary permeability and thus to estimate better the degree of activity which the patient may be allowed. The authors found that in normal individuals and in patients in whom there is no latent respiratory insufficiency there is no change in the consumption of oxygen, the pulmonary ventilation or the number of erythrocytes, while breathing mixtures of different concentrations of oxygen. In patients with a latent respiratory insufficiency, however, there occurs first an increase in pulmonary ventilation, when the oxygen content of the inspired air is lowered to 15 per cent. The increase in pulmonary ventilation is apparently designed to increase the oxygen tension in the alveolar air. In addition an increase of the red blood cells occurs which is interpreted as a humoral mechanism of compensation, arrived at to compensate for an incipient state of anoxia. The intensity of these compensatory mechanisms is the more pronounced the severer the

latent respiratory insufficiency is.—*Il numero di globuli rossi nel tubercolotico, che respira in ossigeno al 15, 21 e al 50 per cent, G. Scoz & E. Filla, Riv. di tisiol., 1940, 13: 447.*—(*G. Simmons*)

Pulmonary Stasis and Tuberculosis.—In a number of rabbits ligation of an upper pulmonary lobe was performed before and after the animals were inoculated with tubercle bacilli. The ligation was sufficient to cause stenosis of the involved bronchus and occlusion of the collateral circulation between the bronchial and pulmonary vessels. Although it was not tight enough to cause compression of the pulmonary arteries, it caused compression of the veins and a corresponding increase of the blood-pressure in the pulmonary circulation. This procedure is said to have brought about a noteworthy influence upon the local evolution of the experimental tuberculosis. In the majority of animals the specific lesions were fewer and less extensive than in control animals. In 25 per cent of the rabbits, however, total caseation of the ligated lobe and symphysis of the overlying pleura occurred. In the latter cases microscopic examination revealed a nonspecific reaction with fibrosis all around the necrotic foci, the bronchi and the vessels. Such a reaction was never encountered in the control animals. Whereas there was no difference in the life span in operated animals and in control animals when massive doses of bacilli had been inoculated, the former survived the latter for more than one-third of the duration of the infection when the number of bacilli injected was small. The operative trauma, which had no effect on healthy rabbits, caused a fatal shock in 4 out of 14 animals which had been infected with tuberculosis prior to the operative intervention.—*Influenza della stasi pulmonare nella tubercolosi sperimentale, F. Guerriero & V. De Franciscis, Riv. di pat. e clin. d. tuberc., 1940, 14: 357.*—(*G. Simmons*)

Venous Pressure in Pulmonary Fibrosis.—In the majority of cases of unilateral pulmonary fibrosis due to tuberculosis there is a difference in the venous pressure as determined in both arms. The venous pressure is considerably lower on the side where the fibrosis had occurred. Due to differences in the anatomical position of the veins, the venous pressure is usually lower on the right; the lowest values in a series of 21 patients studied were encountered in a case of a right fibrothorax. In cases with a mediastinal shift this lowering of the venous pressure is less evident; as a matter of fact, an increased pressure may be observed at times.—*La determinazione della pressione venosa bilaterale nelle sindromi retrattive primarie monolaterali di natura tubercolare, C. Panizzoni, Riv. di tisiol., 1942, 15: 213.*—(*G. Simmons*)

One-Stage Operation for Putrid Lung Abscess.—The authors believe that morbidity and mortality in acute putrid abscess are due to the type of operation used and not to the disease itself, and they stress the low mortality and high degree of complete success with the one-stage operation. Except for abscess facing fissures, diaphragm or mediastinum, adhesions are present in seven to ten days and the abscess can be opened in one stage. Precise roentgenography is necessary for accurate localization and, for this purpose, two sets of films are taken—one to localize the abscess, the second after injection of a mixture of iodized oil and methylene blue into the parietes at the point of contact with the abscess. They stress the importance of complete unroofing of the abscess and of all recesses. Inadvertent entry of the free pleural space is treated by converting the small opening into a larger one, broadly suturing the lung surrounding the abscess to the thoracic musculature and placing a gauze pack over the suture line. In abscess without viscero-parietal adhesions (abscess facing fissure, etc.) the one-stage operation is also used. A liberal opening in the free pleura is effected, with broad suturing of normal lung to the thoracic parietes. A gauze strip is laid over the suture line and the free pleural space thereby scaled off. The abscess is then needled and opened into. To prove their contention that morbidity and

mortality are due to the type of operation used and not to other factors, they cite the results of 162 cases of acute putrid abscess of their own. There was no selection and many were very severe. The mortality was 2.47 per cent. There were only 4 deaths, 3 of which they ascribe to infection due to errors in technique. In only one case was death ascribable to the disease itself. Complications were few and complete cure obtained in the great majority of cases. Only 3 cases of empyema occurred in the entire series and these comprise errors in operative technique. Where the free pleural space was intentionally entered (over 12 cases), not a single instance of pleural infection resulted. The necessity for secondary operations they also ascribe to errors in technique and not to the disease itself. The follow-up of all their cases over many years has established the fact that permanent cure followed the described operation. They call attention to the fact that the one-stage operation was used successfully in every case of nonputrid abscess also (22), with lasting cure in all of them.—*Acute Putrid Abscess of the Lung, H. Neuhof & E. Hurwitt, Ann. Surg., October, 1943, 118: 656.*—(*D. J. Rednor*)

Resection for Pulmonary Abscess.—The author presents a series of 66 cases and contrasts the low mortality (4.5 per cent) and excellent end-results of acute abscess with the high mortality (22.8 per cent) and poorer end-results in chronic abscess. In the chronic abscess group, primary lung resection was accompanied by a lower mortality (7.1 per cent) and better end-results than other types of treatment. Secondary resection following previous drainage operations salvaged otherwise unsuccessful cases and resulted in no immediate mortality, but a higher incidence of late complications and deaths increased the eventual mortality of all resections to 12.5 per cent, as compared with 22.8 per cent mortality in the entire group of chronic abscess cases treated surgically. The duration of the chronic cases was three months to several years from the onset of symptoms. A large percentage of patients therefore presented complications—multiple abscesses, chronic organizing pneumonitis with fibrosis and atelectasis, bronchiectasis, perforation with encapsulated empyema. In such cases, simple pneumonotomy resulted in improvement, but incomplete recovery, and the advisability of secondary pulmonary resection is suggested. From the author's series and the reports of others, he believes primary resection without preliminary drainage to be the procedure of first choice in chronic abscess if one or more of the following conditions exists: (*1*) multiple abscesses or extensive destruction in one or more lobes, (*2*) secondary bronchiectasis, (*3*) atelectasis and pneumonitis unrelieved by bronchoscopic treatment, (*4*) uncontrolled bleeding, (*5*) perforation and localized empyema. In respect to the latter complication, the evacuation of the empyema and resection of the involved lobe in a single-stage operation was deemed technically feasible and reasonably safe. The operative technique is described in detail.—*The Surgical Treatment of Chronic Pulmonary Abscess, G. E. Lindskog, Surgery, May, 1944, 15: 783.*—(*D. J. Rednor*)

Lung Abscess and Influenza.—The author analyzed 17 cases of influenzal pneumonia occurring during the recent epidemic. The ages varied from twelve to sixty years. There were 5 deaths. In 5 cases lung abscess developed and 3 of these died. A study of the abscess cases revealed *Staph. aureus* to be the main constituent of the sputum. Treatment was with sulphadiazine, sulphamezathine, and sulphapyridine with the usual poor results noted in cases of influenzal pneumonia. Necropsy revealed that in the first case the right lung showed confluent bronchopneumonia with numerous abscesses 0.5 cm. in diameter in the anterior half of the upper lobe, and purulent bronchitis, as well as serofibrinous pleurisy. The second case—a twenty year old female munition worker, revealed a mucopurulent bronchitis; the right middle lobe showed gray consolidation, in front of which was a superficial acute abscess

5 x 4 x 4 cm. extending nearly to the midline behind the sternum. There was spread of pus to the mediastinum above the base of the heart, with two small secondary abscesses here, near enlarged lymph nodes. A fibrinous pericarditis and two brain abscesses were also discovered. In the third fatal case necropsy was refused. The 2 patients who recovered had a long recovery period despite intense therapy.—*Lung Abscess in Relation to the Influenza Epidemic, E. David, Brit. M. J., March 25, 1944, 1: 416.*—(*D. H. Cohen*)

Radiology of Bronchiectasis.—In acquired bronchiectasis the flat X-ray film may show no abnormalities at all or the following signs: depression of the interlobar fissure, without distortion; abnormal bronchi, visible as parallel lines or radiotranslucent circles; honeycombing due to dilated bronchi and some surrounding pneumonitis; clouding due to pneumonitic changes. Atelectasis, emphysema, fibrosis, enlarged hilar shadows, pulmonary tuberculosis may be seen. Radiological findings in congenital bronchiectasis are: multiple annular shadows with or without fluid levels; isolated annular shadows; a well rounded opacity due to a cyst filled with fluid; obscuring of an entire lung field. Bronchographic examination permits the differentiation of acquired bronchiectases into cylindrical, saccular and varicose ones. Blunting together with crowding of bronchi is indicative of bronchiectasis. In congenital bronchiectasis, the small cysts always fill with lipiodol; the bigger, isolated cysts fill with much more difficulty.—*The Radiology of Bronchiectasis, S. F. Oosthuizen, Clin. Proc., Cape Town, March, 1944, 3: 133.*—(*G. C. Leiner*)

Inhalation of Sulfathiazole.—Fifty ambulatory or semi-ambulatory white male adults, employees of the Panama Canal or in the military service of the United States, were selected for treatment on the basis of the following criteria: cough and expectoration of more than six weeks' duration, lack of response to previous therapy and presence of bronchial lesions of bacterial origin. A 5 per cent solution of sodium sulfathiazole was placed in a nebulizer and the rate of flow was maintained at 4 liters per minute by connecting the nebulizer to an oxygen tank equipped with a flow-meter. The patients inhaled the material for twenty-minute periods three times daily over a ten-day period. Approximately 2 cc. were used in a single treatment. Toxic reactions occurred in 2 cases, but consisted only of discomfort and swelling of the nasopharyngeal mucosa. Five case histories are presented. The procedure failed completely in bronchial asthma due to nonbacterial inhalants. Forty-three cases, or 86 per cent of the series, showed definite improvement.—*Treatment of Bronchial Lesions by the Inhalation of Nebulized Solution of Sodium Sulfathiazole, I. L. Applebaum, Dis. of Chest., September–October, 1944, 10: 415.*—(*K. R. Boucot*)

Sulfonamides in Bronchiectasis.—Twelve patients with acquired bronchiectasis were treated with adequate amounts of sulfadiazine. Specimens of bronchial secretion were obtained by bronchoscopic aspirations at intervals from one to four days. By a special method, clear filtrates of the specimens were obtained and the concentration of sulfadiazine in the bronchial secretion was compared with the blood level of sulfadiazine obtained at the time of bronchoscopy. The average ratio of the concentration in the bronchial secretion to the one in the blood was 0.58 with an average variation from the mean of 14 per cent. In 10 patients with acquired bronchiectasis a 5 per cent suspension of mycocrystalline sulfathiazole or a 2.5 per cent aqueous solution of sulfadiazine was instilled bronchoscopically or directly through the larynx. Specimens of the bronchial secretion were obtained by bronchoscopic aspiration at twenty-four-hour intervals. The concentrations found when mycrocrystalline sulfathiazole was used depended largely on the amount of sputum produced at the time of instillation. When aqueous solution of sulfadiazine was used only insignificant amounts of sulfadiazine were

found after twenty-four hours regardless of the amount of secretion. Ten patients received sulfadiazine by mouth in courses lasting from four to fifteen days. The blood level was kept between 8 and 12 mg. per cent. Bronchoscopic aspirations were performed during the same time. The clinical effect was estimated on the basis of the reduction in amount of expectoration and on the basis of alteration in the bacterial flora in the bronchoscopically obtained specimens. At the end of the combined course of sulfadiazine and bronchoscopic aspiration, the daily sputum volume was reduced to one-fifth to one-third of the original amount of sputum. Bacteriological studies of the specimens removed by bronchoscopic aspirations were not conclusive, since no uniform results were obtained. The instillation method has disadvantages, such as the irregular distribution of the material, the necessity of frequent instillation, the increase in viscosity of the sputum and the decrease in efficacy in the presence of purulent material. There was one untoward reaction following the instillation of 5 per cent microcrystalline sulfathiazole suspension which was probably due to transient occlusion of some segmental branch bronchi. The combined sulfonamide and bronchoscopic treatment should be of value in the preoperative treatment of suppurative pulmonary diseases. In cases of nonsurgical bronchiectasis it should be given a trial.—*Sulfonamides in Bronchial Secretion: The Effect of Sulfonamides in Bronchiectasis, C. M. Norris, J. A. M. A., November 13, 1943, 123: 667.*—(*H. Abeles*)

Resection in Bronchiectasis.—A series of 64 cases is presented (55 lobectomies, 9 pneumonectomies) with one operative death, giving a mortality of 1.6 per cent. All operations were of the one-stage type, using intratracheal anesthesia. Partial lobectomy of one or two lobes was done in some cases and individual ligation technique favored. The factors influencing morbidity and mortality are analyzed and divided into preoperative, operative and postoperative. Preoperative factors: (*a*) The most important is the degree and distribution of the bronchiectatic involvement. If even a small amount of bronchiectatic tissue remains, especially on the involved side, the incidence of complication, especially empyema or atelectasis, is greater. (*b*) The degree of fibrosis and emphysema, especially in the older age group, is directly related to the degree of resistance to pulmonary infection and to factors involved in ventilation and circulation with possible resulting anoxia. The operative factors increasing morbidity and mortality are obstructed airway due to secretion or blood, inadequate pulmonary ventilation, reflex stimulation by surgeon and anesthetist, excessive trauma and blood loss, excessive physiological disturbances affecting the position of the mediastinum and preventing expansion of the remaining lobe or lobes. The postoperative factors include the retention of bronchial secretions, delayed expansion of the remaining lobe or lobes and anoxia. The author stresses the importance of overcoming each of the above conditions. The preoperative preparation should include adequate postural drainage and bronchoscopy to decrease the amount of secretion within the bronchi. A course of sulfa drug is of great value in lessening the degree of active infection. Anemia, hypoproteinemia and vitamin deficiency should be corrected. During operation, maintenance of a clear airway by the anesthetist is of paramount importance. By lessening the amount of secretion and blood, postoperative empyema and atelectasis are kept at a minimum. The removal of all involved tissue, careful hemostasis and avoidance of trauma, avoidance of reflex stimulation by excessive manipulation and adequate blood transfusions are routine considerations. Postoperatively, encouragement of cough and suction (by bronchoscopy if necessary or if in doubt) of retained secretions are indicated. Collapse of the remaining lobe is prevented by early aspiration of pneumothorax and closed drainage of empyema. Anoxia is best avoided by oxygen therapy and blood transfusions, both in adequate amounts. Of 59 cases with a sufficiently long follow-up period, the results were excellent or good in 42; 10 had residual

bronchiectasis with some cough or sputum, and, of these, 9 showed marked improvement; 4 had postoperative hemorrhages, but were otherwise in good condition; 2 had tuberculosis, one with occasional positive sputum after operation, the other had a contralateral spread which later cleared; one case had a residual empyema cavity due to delay in performing thoracoplasty. There were 2 late deaths, one due to pneumonia in the contralateral lung (also bronchiectatic), the other due to carcinoma of the main bronchus one year later. The complications after lobectomy (drainage was instituted in all 48 cases) were 5 instances of collapse of the remaining lobe, none permanent. In the 9 pneumonectomy cases, 7 required one or more thoracotomies (5 of these were drained immediately, at the time of operation) and 3 patients required thoracoplasty following drainage.—*Surgical Treatment of Bronchiectasis: Factors Influencing Post-operative Morbidity and Mortality, H. C. Maier, Surgery, May, 1944, 15: 789.*—(*D. J. Rednor*)

Air Embolism following Bronchoscopy.—Patient had extensive saccular and cylindrical bronchiectasis for which he was bronchoscoped about fifteen times during a period of two years. He experienced such marked relief from this treatment that lobectomy was not advised. At his sixteenth bronchoscopy no unusual difficulty was experienced, though slight bleeding was noted at the time, but this was presumed to be from superficial trauma to the mucous membranes. Convulsions beginning in the right leg and arm were noted one and three-quarters hours later. Ophthalmoscopic examination disclosed bubbles of air streaming through all vessels of the left retina and a smaller number in those of the rgiht eye. Patient died in coma in another hour. At autopsy the diagnosis was confirmed and the source of the air embolism found in a small tear in a 2 mm. vein. Recommended prophylaxis is a head down position in any patient where bleeding is seen to occur after deep instrumentation of the bronchial passages.—*Death from Air Embolism following Bronchoscopy, R. A. S. Cory, J. Thoracic Surg., February, 1944, 13: 30.*—(*W. M. G. Jones*)

Lobectomy for Bronchiectasis.—Dissection of the hilum is preferred to the older method of tourniquet lobectomy. The advantages are avoidance of late infection of the stump, diminution of secondary hemorrhage, decrease of the chance of fistula formation and more complete removal of the diseased lobe. Out of a series of 100 consecutive patients, 8 died following operation. Two were late deaths due to tuberculosis and one of the remaining 6 deaths was due to tuberculous empyema. Only 2 deaths were due to suppurative bronchopneumonia and one was caused by brain abscess. Results were good in 83 cases, fair in 5 and poor in 4. Complications were few. The most common complication was postoperative atelectasis. The aim after operation is the immediate and permanent expansion of the remaining lobe or lobes, and when this takes place the result is almost invariably good. When expansion is not immediate, it may become complete within a few days or one week. When the delay is longer, complete expansion often fails to take place. Massive collapse occurred in 29 cases, 23 of which had eventually a good result. When the lung expands immediately, pulmonary complications are rare. Complete and immediate expansion occurred in 56 cases. The impression is gained that if adhesions are present over the remaining lobe, chances for complete reëxpansion are better. Adhesions are therefore produced by a preliminary dusting of the good lobe by talcum powder. The high incidence of pulmonary tuberculosis following operation is striking Seven cases developed this complication, and it proved fatal in 3. Dissection of the hilar structures may be the reason for this occurrence. Empyema developed in 55 cases, and in 47 it was certainly associated with bronchopleural fistula. In the remaining cases it was probably so. As long as the incidence of postoperative fistula remains necessarily high (because a perfect method of closure of the bronchial stump has not as yet been devised)

it seems advisable to drain all cases postoperatively for a short time. Of the cases who had a short period of postoperative drainage, up to five days, 76 per cent did not develop empyema, whereas only 56 per cent of the undrained cases remained uninfected.—*Dissection Lobectomy for Bronchiectasis, T. H. Sellors & V. C. Thompson, Lancet, July 22, 1944, 247: 101.*—(*H. Marcus*)

Replacement of Protein Loss following Pulmonary Resection.—To offset the great blood loss in major operations on the chest (White and Buxton found the average loss to approximate 725 cc. in thoracoplasty, 1,600 cc. in lobectomy, and 1,460 cc. in pneumonectomy), the authors have experimentally determined the need for replacement therapy and the optimum route of administration. Dogs were used, and determinations of the blood plasma protein fall due to anesthesia, exploratory thoracotomy and resection of lung tissue with and without complicating infection were made. The replacement therapy needed and the optimum route of administration were determined by giving blood transfusions, serum transfusions, serum intrapleurally and serum intrapleurally plus blood transfusions. In the control series (that is, without replacement), the lowering of plasma protein was found to be due to (*1*) the anesthesia (0.48 g. per cent average fall); (*2*) the operation on the chest wall (0.45 g. per cent average fall); (*3*) removal of lung tissue *per se* (1.5 g. per cent average fall in lobectomy, 1.31 g. per cent average fall in pneumonectomy with individual ligation); (*4*) infection (in most cases with infection, an even greater protein loss was noted). The replacement series of animals was divided into three groups, namely: (*1*) lobectomy, (*2*) pneumonectomy with mattress suture technique and (*3*) pneumonectomy with individual ligation. Lobectomy—those receiving serum replacement showed an average fall in plasma proteins of 0.58 g. per cent (1.5 g. per cent in the nonreplacement group). Those receiving whole blood replacement showed an average fall in plasma proteins of 0.63 g. per cent. In both noninfected replacement groups alone the average loss was only 0.28 g. per cent. Pneumonectomy with mattress-suture technique—in this group, although the animals received only one-half as much replacement therapy as the preceding lobectomy group, a plasma protein level of 5.0 g. per cent or above was maintained in all the dogs (except the 2 receiving whole blood replacement). Pneumonectomy with individual ligation—the average fall with serum replacement was 0.56 g. per cent (compared with 1.31 g. per cent fall in the nonreplacement group); in the group receiving serum intrapleurally (heretofore serum replacement has been by the intravenous route only) the average fall was 1.0 g. per cent for the infected ones, and 0.79 g. per cent for the uninfected ones; if twice the amount of serum intrapleurally were given, the fall was 0.62 g. per cent in the infected group and 0.52 g. per cent in the noninfected group, showing the marked influence of sufficient replacement material; in the group receiving serum intrapleurally plus whole blood intravenously the average fall was 0.34 g. per cent for the infected group, and 0.44 g. per cent for the noninfected group. It is thus apparent that a marked fall in plasma proteins could be prevented by intravenous serum or whole blood in sufficient amounts. A similar result was obtained by the use of adequate amounts of serum intrapleurally. A greater fall was usually observed in infected animals (on the average, 25 per cent greater) than in the noninfected and could not be entirely prevented by replacement therapy, so that, while the level of plasma proteins was usually maintained above 5.0 g. per cent by replacement therapy, it was occasionally below this level in infected animals. The total amount of whole blood used to prevent hypoproteinemia was approximately 10 to 15 cc. per kilo of body weight. Larger amounts of serum intrapleurally were needed to obtain similar results. Clinical studies on humans show the same marked protein loss and the same response to intravenous blood or serum replacement. The authors stress the importance of maintaining the normal blood and

plasma protein levels in reducing the morbidity and mortality rates in chest surgery and also note the influence of hypoproteinemia on the development of postoperative infections (Cannon *et al.*). In civilian and military practice alike, they urge blood or serum transfusion before operation in the presence of a lowered plasma protein. Likewise, loss of additional protein during and following operation should be expected and adequate replacement planned for in advance, so that a normal or nearly normal plasma protein level can be maintained.—*The Use of Plasma for Filling the Pleural Space after Loss of Varying Amounts of Lung, W. E. Adams & T. F. Thornton, Surgery, April, 1944, 15: 521.—(D. J. Rednor)*

Sulphamethazine in Pneumonia.—The authors treated 77 cases of pneumonia with sulphamethazine. This sulphonamide is considered to be more soluble than sulphadiazine and, thus, its deposition in the kidneys is unlikely. Of the 51 bronchopneumonias treated in the under twelve group, 30 were secondary to measles, 2 to whooping-cough, and the rest primary. The ages varied from four weeks to eighty-five years. The dosage employed was 8 g. daily in six-hourly doses. Plenty of fluids were administered. Out of 77 patients, 65 appeared to respond and 12 did not; 3 of the latter died. Of those not responding, 6 cases in adults appeared to be aberrant cases of lobar pneumonia. The 3 deaths (4 per cent) occurred in (*1*) a thirteen-weeks-old baby with whooping-cough and bronchopneumonia, who was admitted on the sixth day and died four days later; (*2*) a case with measles and bronchopneumonia, admitted on the sixth day of disease, who died on the fifth day after admission; and (*3*) a twenty-six-year-old female with extensive bronchopneumonia, who survived only twelve hours after admission. Toxic effects occurred in only 3 cases. One child aged two showed almost complete sudden urinary suppression for one day. On stopping the drug the renal flow was restored within twenty-four hours. Two other patients under two developed a curious painless brawny edema. All 3 children were acutely ill and all 3 made a good recovery. Apart from these toxic effects, sulphamethazine was extremely well taken. Vomiting was absent and nausea was present only slightly in 3 cases. There was no mental disturbance or depression and no interference with appetite. Cyanosis was only moderate. In a similar group of cases treated with sulphapyridine the mortality rate was 9 per cent.—*Pneumonia Treated with Sulphamethazine: Report of 77 Cases, B. A. Peters & M. L. Easby, Brit. M. J., August 21, 1943, 2: 230.—(D. H. Cohen)*

Bronchography in Unresolved Pneumonia.—Forty patients with bronchiectasis were admitted to the station hospital at Fort Eustis, Virginia, during a period of fifteen months. Sixty-seven and five-tenths per cent of the patients in this series had an initial misdiagnosis of primary atypical pneumonia and subsequently were found to have pneumonitis around a preëxisting bronchiectasis. In 75 per cent of the patients the bronchiectasis was unilateral; in two-thirds of these it involved the lower lobe of the left lung. Bronchographic studies should be done in all cases of pneumonia which fail to resolve in a reasonable period (four to six weeks). (Author's Summary.)—*Importance of Bronchography in Cases of Unresolved Pneumonia, G. S. Grier III, Arch. Int. Med., June, 1944, 73: 444.—(G. C. Leiner)*

Obscured Pneumonic Densities.—Two-thirds of the cardiac shadow lies on the left side of the thoracic spine and overlaps the mesial and lower portion of the left lung in the posterior-anterior view. In this view the cardiac density is fairly homogeneous and, therefore, any variation should arouse suspicion of pneumonia in this region. The fact that a pneumonic process may be obvious in the X-ray film does not rule out the possibility of another pneumonic lesion behind the heart. Recognition of such a lesion is important in the differential diagnosis of intrathoracic and intraäbdominal disease and may prevent

needless operation. Illustrative is a patient who was admitted with a tentative diagnosis of acute appendicitis and in whom a pneumonic process was seen in the left lower lobe only in the oblique and lateral films. Meningeal irritation may also be of pneumococcal origin and may require multiple views for diagnosis. Four cases are described.—*Pneumonic Densities Obscured by the Cardiac Shadow, G. H. Stein, Radiology, December, 1943, 41: 576.*—(*G. F. Mitchell*)

Atypical Pneumonia.—The autopsy findings of 90 patients who died of atypical pneumonia are presented. The basic pulmonic lesion was an acute interstitial pneumonitis; its extent was from a portion of one lobe to a diffuse bilateral involvement. Slightly raised, whitish, firm, thickened bronchioles filled with pus were seen. They were bordered by a narrow zone of congested or hemorrhagic lung. In cases uncomplicated by secondary bacterial invasion there was no frank pulmonary consolidation. Microscopically the affected bronchioles showed ulceration of the mucous membrane. They were filled with pus, desquamated mucous membrane cells and mucoid fluid. The walls were edematous and infiltrated by plasma cells, lymphocytes and large monocytes. There was a peribronchiolar mononuclear cell exudate. The lung septa were edematous and contained mononuclear cells. Some alveolar spaces contained air, others edema fluid, others fibrinous cells, others masses of unorganized hemorrhage. No microörganisms were seen in the affected alveolar walls, alveolar lumina, peribronchiolar tissues, lung septa, bronchiolar walls. The larger bronchi showed edema, congestion and round-cell infiltration in the submucosa. Patches of fibrinous pleuritis were found in a few cases. In 4 cases cerebral lesions consisting of congested vessels and small perivascular hemorrhages were seen. Some hemorrhagic foci had necrotic centres, others, glial proliferations around them. The pulmonic lesions were similar to those observed in other virus diseases, such as experimental swine influenza, epidemic human influenza, measles pneumonia. There was also a tendency toward secondary bacterial infection.—*Pathology of Atypical Pneumonia, Abstract of paper by Major A. Golden, Bull. U. S. Army Med. Dept., October, 1944, 81: 64.*—(*G. C. Leiner*)

Atypical Pneumonia.—Primary atypical pneumonia has been defined by the Surgeon General as a syndrome characterized by an influenzal-like onset, relatively normal white count, relatively slow pulse, patchy areas of consolidation and absence of any proven bacterial etiology. Pathologically there is a hemorrhagic interstitial pneumonia with an acute bronchitis. Campbell *et al.*, from postmortem observations, believe the mottled densities noted at X-ray examination are areas of atelectasis explainable on a mechanical basis. This study includes 79 patients with pulmonary lesions of the upper lung fields roentgenologically resembling pulmonary tuberculosis. All the patients were white, ranging in age from eighteen to forty-three years, with 76 per cent between eighteen and twenty-seven. Fifty-four had lesions of the right upper lobe, 24 of the left upper lobe and one of both upper lobes. They had the characteristic history and fever, but none had definite chills, pleuritic pains, dyspnea or cyanosis. None appeared acutely ill nor toxemic. Seventeen of the patients had repeated sputum examinations by smear, but there were no facilities available for culture. The time for complete resolution was relatively rapid in most patients. The longest period for complete resolution was twenty-six days. The authors feel, after having studied over 1,000 cases of atypical pneumonia, that there is nothing pathognomonic in a single X-ray film to differentiate this entity from ordinary bronchopneumonia or tuberculosis. No case resembled lobar pneumonia nor had cavitation. Symptoms were frequently more severe with atypical pneumonia than with minimal tuberculosis. Seventy-seven per cent of this series presented symptoms of sufficient severity to warrant hospitalization without any knowledge of the pulmonary pathology.

The only positive differentiation between tuberculosis and atypical pneumonia is by the finding of a sputum positive for the tubercle bacillus and/or by serial X-ray study.—*Primary Atypical Pneumonia Simulating Infiltrative Pulmonary Tuberculosis, A. L. Kruger, A. W. Wallace, J. P. Medelman & S. B. Grimes, Dis. of Chest, May–June, 1944, 10: 171.*—(*K. R. Boucot*)

Atypical Pneumonia.—At Camp Crowder Station Hospital 40 cases of atypical pneumonia were observed which were different from other cases of atypical pneumonia. All the patients were members of one company and were admitted within ten days. Twenty-four healthy soldiers were X-rayed and in 4 of these the findings were similar to those in the hospital patients. The symptoms were malaise, chilliness, fever up to 104°F., dry cough and chest pain. In almost all cases the admission diagnosis was nasopharyngitis. Physical findings, such as harsh breath sounds or crepitant râles were present in few patients only. The leucocyte count was 5,000 to 11,000, the sedimentation rate was elevated. The sputa were negative for pneumococci and other pathogenic bacteria. X-ray examination showed increased hilar shadows and accentuated peribronchial markings and, a few days later, soft, irregular patchy mottling. Clinical improvement was seen usually after one week or ten days. Two patients showed patchy infiltrations on their chest roentgenograms even on the one hundred seventy-seventh day after admission. No fatalities occurred.—*Primary Atypical Pneumonia, L. G. Idstrom & B. Rosenberg, Bull. U. S. Army Med. Dept., October, 1944, 81: 88.*—(*G. C. Leiner*)

Atypical Pneumonia.—A total of 1,862 cases of primary atypical pneumonia, etiology undetermined, were investigated. Bacteriological studies of the sputum, the white cell count, the X-ray appearance and the clinical course were used to distinguish the cases from 62 cases of pneumococcic lobar pneumonia occurring during the period of observation at the same hospital. There was no death in the group of pneumococcic pneumonia, while in the series of primary atypical pneumonia 5 deaths occurred; one due to meningococcic meningitis developing in the convalescent period; in 2 cases gross invasion of hemolytic *Staphylococcus aureus* was found on autopsy. The chance of developing primary atypical pneumonia was greatest on about the twenty-fourth day following a soldier's admission to the camp, decreasing rapidly to about one-sixteenth of this chance on the thirty-fifth to fortieth day. This may bs due to the increased strain during the period of admission to the camp or to the development of a specific immunity. By variation of the isolation technique it was found that no cross infection occurred between patients with upper respiratory infections and patients with primary atypical pneumonia. The minimum incubation period is probably seven days while the maximum incubation period is probably fifteen days. The onset of the disease was gradual in approximately two-thirds of this series while in the remaining one-third it was acute requiring early hospitalization. The most common constitutional symptoms were, in order of frequency, fever, malaise, chilliness; the most common symptoms of the respiratory tract were cough, sputum, chest pain; the most frequent physical findings were fever and dry râles. Since X-ray findings and localizing physical findings were frequently absent in the initial stage the diagnosis at the onset of the disease was often made by exclusion. For differential diagnostic purposes the sputum examination was most significant; the white cell count was usually normal or slightly elevated. No valuable information was obtained by the differential counts. The sedimentation rate ranged from 20 to 40 mm. per hour in the acute stage. With recurrences or reactivations, it showed secondary rises which were as significant as repeated X-ray examinations. The therapeutic measures consisted of expectorants, antipyretics, when indicated, and sulfadiazine when the temperature rose to 102°F. In a group treated by prolonged

bed-rest the incidence of recurrence was 2.6 per cent, while in a group treated by a conventional type of care the incidence of recurrence was 23.3 per cent. In spite of the prolonged period of bed-rest, the average period of hospitalization was shorter than in the comparison group. Following the period of bed-rest a program of physical reconditioning extending over twelve days was carried out. On the basis of these findings it is recommended to keep patients with atypical pneumonia at bed-rest until their sedimentation rate has decreased to at least 10 mm. in one-half hour. The average X-ray clearance time was 32.15 days in uncomplicated cases. The most common complications were effusions and bronchiectasis, some of the latter may have been present prior to the disease.—*Clinical Aspects of Primary Atypical Pneumonia: A Study Based on 1,862 Cases Seen at Station Hospital, Jefferson Barracks, Missouri, from June 1, 1942 to August 10, 1943, A. C. van Ravenswaay, G. C. Erickson, E. P. Reh, J. M. Siekierski, R. R. Pottash & B. Gumbiner, J. A. M. A., January 1, 1944, 124: 1.*—(*H. Abeles*)

Cold Autohemagglutinins following Atypical Pneumonia.—In a thirty-eight year old male patient atypical pneumonia was followed by the development of acrocyanosis following exposure to cold. This phenomenon could be reproduced at will by exposing the patient to cold. Capillaroscopy showed ballooning of the summit of the loops in the presence of cyanosis. The only blood abnormality was the presence of cold autohemagglutinins present even at room temperature. Patient's blood was of group O. His serum agglutinated not only his own washed red cells but also the washed red cells of normal group O persons. No hemoglobin was found in the urine at any time. Physical examination and laboratory studies gave no indication of the presence of other conditions in which cold agglutinins were previously described. It is assumed that by chilling reversible intravascular agglutination was caused by the autohemagglutinins. The possible hazard in using convalescent blood from persons recovered from atypical pneumonia is pointed out.—*Cold Autohemagglutinins following Atypical Pneumonia Producing the Clinical Picture of Acrocyanosis, F. C. Helwig & E. D. Freis, J. A. M. A., November 16, 1943, 123: 626.*—(*H. Abeles*)

Pseudobronchiectasis following Atypical Pneumonia.—The authors point out that an acute, sometimes epidemic, atypical bronchopneumonia with leucopenia ("atypical pneumonia") may produce bronchial changes resembling bronchiectasis, but the damage to the bronchi is not permanent and recovery ensues in four to twelve weeks. The disease may be characterized as an acute respiratory infection marked by cough and thick purulent sputum, leucopenia (and negative laboratory studies, including those on the sputum), failure of sulfonamide therapy to relieve symptoms and gradual recovery within three months. X-ray films taken during the acute phase tend to show mottled densities and especially lobular or lobar atelectases. When the lesions are found in the upper part of the lung the X-ray films may resemble tuberculosis and, when in the basal portions, bronchiectasis. Lipiodol instillation may show short, wide, dilated bronchi, but these changes are not permanent and subsequent oil filling will be normal. The factors to be noted in the diagnosis to differentiate from bronchiectasis are: short clinical history; sputum which may be abundant or frankly purulent, but not foetid, nor does it separate into the usual three layers; bronchoscopic findings somewhat different from those of bronchiectasis. In the latter, edema and redness of the mucous membrane at the area of infection are usually found, but in pseudobronchiectasis the entire mucous membrane is edematous, a generalized suppurative bronchitis, superficial bleeding is rare, foetid odor is absent and relief from bronchoscopic treatment is minimal. Conservative treatment in such cases is indicated.—*Pseudobronchiectasis, B. Blades & D. J. Dugan, J. Thoracic Surg., February, 1944, 13: 40.*—(*W. M. G. Jones*)

Pericarditis in Atypical Pneumonia.—Three cases of pericarditis associated with primary atypical pneumonia are presented. The patients were between nineteen and twenty-seven years of age. The disease started with an upper respiratory infection which was followed by a pneumonia. Sputum examination for pneumococci, throat cultures for specific organisms and blood cultures were negative. Seven to forty-one days after the onset of the upper respiratory infection the patients developed rise in temperature, tachycardia and leucocytosis. A pericardial friction rub was heard in 2 of the cases, changes of the electrocardiogram typical of pericarditis were seen in all 3. X-ray examination revealed enlargement of the heart in one patient. It is believed that the cause of the pericarditis is identical with that of the primary atypical pneumonia. All patients recovered fully and all symptoms and signs of pericarditis disappeared.—*Pericarditis Associated with Primary Atypical Pneumonia, D. Finkelstein & M. J. Klainer, Am. Heart J., September, 1944, 28: 385.*—(*G. C. Leiner*)

Rheumatic Pneumonia.—Pathological examinations were performed on 63 consecutive cases of acute and chronic rheumatic fever. Of these, 8 showed distinctive pathological changes. Control cases included various types of acute pneumonia, chronic passive congestion of the lungs, both uncomplicated and complicated by pneumonia, and chronic organizing pneumonia. Rheumatic infection associated with specific pulmonary involvement gave sudden rise to a syndrome including fever, cough, bloody sputum and a leucocytosis usually over 15,000. Dyspnea was frequent and severe. There was little or no response to sulfonamide therapy and X-ray changes were not of specific diagnostic value. Pathological findings included fibrinous exudate more extensive and denser than in ordinary pneumonias, a focal necrosis and alveolitis consisting of a homogeneous eosinophilic swelling of the wall with necrosis and characteristic polymorphonuclear infiltration, fibrinoid swelling and cellular infiltration of vessel walls sometimes extending to perivascular areas, varying degrees of infiltration with foamy mononuclear phagocytes, incomplete lining of alveolar walls with swollen septal cells, and finally specific granulomata termed "Masson bodies." These granulomata occurred in alveolar ducts with frequent extension into the alveoli resulting in varying degrees of atelectasis. They were round, oval or irregular bodies with pleomorphic cellular elements, few or no vessels, and partially or completely covered with cuboidal cells. Typical Aschoff cells were not found although the cellular components of the granulomata showed similar polarity and loose stroma. The "Masson body" was found in only a few instances in which no previous rheumatic history was elicited, one being a case of a seventy-three year old man dying of coronary sclerosis. Many of the granulomata appeared to originate as papillary protrusions from the walls of the alveolar ducts or alveoli, while others seemed to be formed by organization of fibrinous plugs. It is felt that the "Masson body" may remain a characteristic structure for an indefinite period.—*Rheumatic Pneumonia, K. T. Neubuerger, E. F. Geever & E. K. Rutledge, Arch. Path., January, 1944, 37: 1.*—(*D. G. Freiman*)

Pneumonia in Smallpox Contacts.—An outbreak of pneumonitis followed the admission of a case of smallpox to a base hospital in the Middle East. Five medical officers and 2 nursing orderlies were affected, although they had been vaccinated recently and again after the patient was admitted, and all had shown immune reactions. The onset of the illness was malaise and fever between the eleventh and the eighteenth day after exposure. Fever lasted for from four to twelve days and reached 104°F. in some cases. A few crepitant râles were heard in the lungs. No characteristic laboratory findings were obtained. X-ray examination of the lungs showed mottled shadows which were rounded or confluent and were mainly present at the bases. Six of the 7 cases showed these findings. The X-ray lesions appeared on the third day after expo-

sure and in one case took six weeks to resolve completely. The conclusion was that the lesion observed represents some kind of virus pneumonia similar to lung lesions observed in other virus diseases. It may be that relatively immune close contacts react to the smallpox virus in this manner.—*Outbreak of Pneumonia in Smallpox Contacts, H. T. Howat & W. M. Arnott, Lancet, September 2, 1944, 247: 312.*—(*H. Marcus*)

Inhalation Pneumonia.—Acute inhalation pneumonias caused by noxious fumes are increasing in frequency, especially with the complexity and volume of wartime industry. Many industrial gases are potentially dangerous. Nitric fumes are discussed since they were the causative factor in the 2 cases reported by the authors. Nitric acid is used extensively in many industries, but ordinarily the concentration of the fumes is not sufficient to be toxic. However, accidents do occur resulting in the picture of severe acute pulmonary changes. If removed from the fumes, the patient may recover, or overwhelming edema may result in death. Nitric fumes consist of five oxides of nitrogen; the dioxides being considered the most insidious and the most toxic. Some also believe that nitrous gases make the body more sensitive to carbon monoxide and that a combination of factors is responsible in some reported deaths. Pathological changes in the lungs vary with the intensity of the exposure. There may be mild inflammation of the tracheobronchial mucosa or the irritation may be more extensive involving the minutest bronchioles, acute hyperemia and edema of tissues around the bronchioles giving a miliary or nodular appearance. A sterile bronchopneumonia may follow. In more severe cases a marked extravasation of fluid and pulmonary edema is found. If death occurs after an interval of a week or more, miliary fibrous nodules may be found at the terminal bronchi. Lung changes due to chronic inhalation have been reported among welders. The signs and symptoms of nitric fume inhalation are usually delayed from a few to as long as thirty hours, and, consequently, cause and effect are not always apparent. The initial symptoms are headache, a sensation of pressure upon the anterior chest wall and dry cough which may be followed by chills, fever, respiratory distress and cyanosis. The acute illness or convalescence may be complicated by lobar or lobular pneumonia, recovery occurring after weeks of remissions. When the concentration has been high or exposure long, death usually occurs within forty-eight hours. When delayed, right heart failure, pleural effusion, pulmonary congestion and infection, anemia and focal hemorrhagic lesions in other organs play a rôle. While no chronic pulmonary disease has been proved as resulting from the effect of prolonged exposure to nitric fumes, anorexia, insomnia, weight loss, headache and dry cough are believed to occur. Roentgenograms are characterized by unusually extensive pseudonodular infiltrations throughout the lungs having no hilar or central preponderance. Subsequently, they become confluent, resembling patches of bronchopneumonia. In patients recovering, the roentgenograms are most striking, marked clearing being found in serial films taken only a few hours apart. Eventually the pseudo-nodular infiltrations disappear leaving only exaggerated lung markings, while in favorable cases no evidence of pulmonary change is visible after a period of four to ten days. Two cases of inhalation pneumonia from nitric fumes are presented. In the first case, they were produced by the open-vat mixing of nitric and hydrochloric acid, and the second case followed acetylene welding in the hold of a ship. Both had typical roentgenological findings and in both pulmonary clearing coincided with clinical improvement.—*Inhalation Pneumonia from Nitric Fumes, M. C. Camiel & H. S. Berkan, Radiology, February, 1944, 42: 175.*—(*G. F. Mitchell*)

Loeffler's Syndrome.—Loeffler's syndrome is a migratory transitory pulmonary infiltration demonstrable by X-ray and associated with eosinophilia. The extent of the radiographic findings and the level of eosinophilia

are frequently in startling contrast to normal physical findings, or signs consisting of a few moist and sibilant râles. The clinical course is mild and the symptoms minimal—fatigue, cough, occasional sharp chest pains, possibly small amounts of sputum, asthmatic attacks, and moderate temperature elevation. The roentgenogram reveals large or small consolidations appearing suddenly, disappearing and reappearing elsewhere. The lower lung fields are frequent sites, and the infiltrations may be sharply defined or vague in outline. The pathogenesis is not clear, but is usually considered to be on an allergic basis. Diagnosis rests on serial films demonstrating transitory shadows. Tuberculosis is the most important differential diagnosis, but coccidioides and neoplasms must also be considered. Treatment is not required in most cases. A case report is presented.—*Transitory Migratory Pulmonary Infiltrations Associated with Eosinophilia (Loeffler's Syndrome), J. W. Peabody, Dis. of Chest, September-October, 1944, 10: 391.*—(*K. R. Boucot*)

Loeffler's Syndrome.—Among the differential diagnostic possibilities in lung lesions, Loeffler's syndrome has to be considered. This disease apparently has no common etiologic background. Allergy seems to play a rôle in some cases, while it cannot be demonstrated to do so in others. The clinical picture and course are quite characteristic. The physical signs are scant in relation to the amount of involvement, as demonstrated by X-ray. The eosinophilia is the most constant abnormal laboratory finding and ranges from 10 to 60 per cent. Cases have mainly been reported from Europe; a case reported in a Negress is given in this report.—*Eosinophilic Infiltration of the Lungs (Loeffler's Syndrome), S. H. Jones & C. R. Souders, New England J. Med., September 7, 1944, 231: 356.*—(*H. Marcus*)

Tropical Eosinophilia.—Loeffler's cases of pulmonary infiltrations with eosinophilia were all observed in Switzerland, and the disease was unknown outside of Europe. Tropical eosinophilia was later described to occur in India, Palestine and Egypt, and although differences exist between the two diseases there are many similarities which makes one suspect a common etiology. The tropical disease is usually more severe and may become chronic, whereas Loeffler stressed the transient character of the syndrome. Since the original cases, however, others were observed where the duration was months and where patients were severely ill. The etiology of either disease is not known. An allergic background is postulated by some, contending that the allergen may be different in various patients and may vary with the locale. This etiology is disputed by others. A case report is appended of an Englishman who fell ill with a typical syndrome upon his return from India. He had an illness suggestive of this syndrome in India which was diagnosed as bronchitis. This illustrates the now well known fact that the disease may be acute, subacute or chronic, and subject to recurrences.—*Eosinophilia with Pulmonary Disease on Return from the Tropics, J. Apley & G. H. Grant, Lancet, September 2, 1944, 247: 308.*—(*H. Marcus*)

Coccidioidomycosis.—The fungus, *Coccidioides immitis*, is recognized as the etiologic agent in two definite entities: the chronic, progressive and highly fatal coccidioidal granuloma and the acute but more benign primary pulmonary coccidioidomycosis, endemic in certain regions of southwestern United States. The authors experienced an epidemic of 75 cases of the latter entity incident to military maneuvers in such an endemic area during the summer of 1942. Infections followed exposure to contaminated dust from the terrain, the incubation period averaging two weeks. Presumptive diagnosis was made on history of exposure with a symptomatology of thoracic pain, cough and occasional hemoptysis, chills and fever, cervical adenopathy with or without sore throat and, less frequently, arthiritic pain. Thoracic physical signs were present in only about one-third of the cases and were usually minimal. The incidence of cutaneous manifestations,

erythema nodosum and/or erythema multiforme, was 25 per cent, considerably higher than in any other reported series. The white blood cell count ranged from normal to 29,000, while the differential count usually showed a late eosinophilia. Erythrocyte sedimentation rate was consistently elevated and its return to normal was considered a satisfactory indication of the patient's recovery. Positive cutaneous reactions to 1:100 or 1:1000 dilutions of coccidioidin were present in all cases. There was a 45 per cent incidence of reaction to tuberculin but careful routine sputum examinations revealed no tubercle bacilli. Hilar enlargement with accentuated bronchovascular markings in the involved parenchyma constituted the chief X-ray finding, although pleural effusion occurred in 3 instances and cavitation in an equal number. Culture of the fungus from the sputum and positive serological tests were the confirmatory diagnostic points. It was pointed out that a positive serological reaction is probably diagnostic but that a negative one does not exclude the infection since humoral antibodies may rapidly disappear. Also this test was believed to be a valuable prognostic guide, since primary infections show a high precipitin titre, gradually decreasing with improvement, and a low or absent complement fixation titre, while just the opposite is true in disseminated coccidioidal granuloma. Although the disease often ran a prolonged course of two or more months the prognosis was good in all save one case of associated coccidioidal granuloma of the skin. Treatment was symptomatic but there was some evidence that convalescent serum was beneficial in 2 cases. Finally it should be stressed that with the current flux of troops, bearing in mind the incubation period, pulmonary coccidioidomycosis may appear far afield from its endemic regions.—*Primary Pulmonary Coccidioidomycosis, D. M. Goldstein & S. Louis, War Med., September, 1943, 4: 299.*—(*L. R. Roll*)

Coccidioidomycosis.—The follow-up report of 75 patients and the report of an additional 10 patients represent the largest series of primary pulmonary coccidioidomycosis ever observed, diagnosed and treated. The 10 new patients acquired the disease in Pallen Pass, California, a hitherto not reported endemic area. Most of the inhabitants of the endemic areas have their primary infection during the first year of residence; only a few develop clinical symptoms usually called "valley fever," "desert fever" or "desert rheumatism." A certain number show an allergic response such as erythema nodosum. Primary pulmonary coccidioidomycosis has a high morbidity and a low mortality, coccidioidal granuloma has a mortality of 50 to 60 per cent. All patients returned to duty. In 3 patients cavity formation occurred, in 2 of them multiple cavities were present. The cavities closed spontaneously. Primary pleuritic effusion represented the initial infection in 3 patients. One of these 3 patients developed a pneumonic lesion which was followed by the appearance of two verrucous granulomata of the skin. They were removed by wide excision; no sinus formation or recurrence developed. Prior to the development of the skin lesions the blood precipitin and complement fixation tests had become positive. The general condition of this patient improved markedly following a whole-blood transfusion from a convalescent patient whose blood had a high precipitin titre without complement fixing antibodies. The most frequent symptoms were thoracic pain and cough, they were present in 88 per cent of the patients, chills occurred in 66 per cent, sore throat in 37 per cent, arthralgia in 28 per cent, hemoptysis in 18 per cent. Fever was a constant finding. Physical signs indicating involvement of the chest were present in 26 per cent of the patients. In the series of 75 patients erythema nodosum occurred in 19 per cent, erythema multiforme in 2.6 per cent; in the series of 10 patients a morbilliform rash of the trunk and lower extremities was noted in 4 patients. The skin lesions appeared eight to fourteen days after the incubation period which varied from one to three weeks. White blood cell count and differential count were of little diagnostic value, eosinophilia was highest

in the second or third week, averaging 6 to 8 per cent. The sedimentation rate was elevated. The Weltmann test was used in some cases as basis for the decision on further hospitalization. The tuberculin patch test was positive in 42 per cent which corresponds to the findings in the general population in that area. The coccidioidin skin test was positive in all patients. A positive serological test is diagnostic but a negative test does not necessarily rule out the infection. The complement fixation titre is high and the precipitin titre is low when dissemination of the granuloma occurs, in primary infections the opposite results are obtained. Sputum cultures for the fungus were often positive, but since the danger of infection is great this procedure should not be carried out routinely. The roentgenological findings were not characteristic, the most common findings were enlarged hilar shadows and increased pulmonary markings. Symptomatic conservative treatment is the method of choice. Convalescent blood with high precipitin titre was used twice and found to be of value. Sulfonamides were of no value.—*Primary Pulmonary Coccidioidomycosis: Follow-up of 75 Cases, with 10 More Cases from a New Endemic Area, D. M. Goldstein & J. B. McDonald, J. A. M. A., February 26, 1944, 124: 557.*—(*H. Abeles*)

Moniliasis.—Bronchopulmonary moniliasis is caused by *Monilia albicans*, a yeast-like fungus which belongs to the *imperfecta* group of fungi. *Monilia albicans* is widely distributed in the tropical and temperate climate. It is very resistant to drying. It is found as saphrophyte in the human mouth and discharges. This fungus is usually nonvirulent; however, when the resistance of the lining membranes of the bronchi or alveoli is lowered as in influenza, pneumonia or bronchitis, the inhalation of the fungus may cause disease. Three forms may be distinguished according to symptoms and course: the mild form with slight cough, scanty sputum and normal temperature; the moderate form with a pronounced cough, tenacious sputum and low grade fever; the severe form with dyspnea, night sweats, cough, loss of weight and sticky sputum which has a sweetish or yeast-like odor. The important factors for the diagnosis are the laboratory tests which must include animal inoculation in order to prove the pathogenicity of the fungus. The production of lesions in the lungs of animals inoculated with the isolated monilias proves the virulence of the monilial strain. The roentgenographic examination reveals a process starting in the hilar regions and usually spreading along the pulmonary markings throughout both lungs offering a cotton-like appearance. The most effective treatment of mild and moderate cases consists of potassium iodide medication; the dose varies from 45 to 100 grains daily. Severe cases show little response to this treatment. Autogenous vaccine, X-ray treatment and sulfapyridine were also used. An additional case of bronchopulmonary moniliasis is reported. A thirty-four year old man was hospitalized for twenty days. He was discharged with the diagnosis of bronchitis. Six weeks later he was readmitted with the complaints of headache, dizziness, nonproductive cough and chest pains. The temperature ranged from 99°F. to 103°F. The radiological examination revealed mild hilar adenopathy and scattered cotton-like infiltrations throughout both lung fields. A diagnosis of bronchopneumonia was made and chemotherapy was instituted. Reëxaminations during the following two weeks showed that the lesions were progressive and partly coalescent. On the sixteenth day of hospitalization the patient expectorated a large amount of sputum with yeast-like odor. *Monilia albicans* was demonstrated on smear and culture. Chemotherapy which had been ineffective was discontinued and the patient was put on 15 grains of sodium iodide intravenously and 10 drops of a saturated solution of potassium iodide by mouth every four hours daily. This was followed by a gradual drop in temperature and by resorption of the infiltrations. The patient was discharged on the eighty-ninth day of hospitalization. The chest film was normal except for slight fibrosis in both lung fields. Tubercle bacilli were

never recovered from the sputum; the tuberculin test was negative.—*Bronchopulmonary Moniliasis, P. E. Wylie & J. A. DeBlase, J. A. M. A., June 17, 1944, 125: 463.*—(*H. Abeles*)

Chest Roentgenograms in Pertussis.—Serial roentgenograms in the postero-anterior and right lateral positions were made on 222 children between the ages of five months and eight years. These children had been admitted to the Willard Parker Hospital, mostly ten to twenty-one days after the onset of symptoms. They were divided into three groups: an afebrile group, a group with low-grade fever and a group with fever over 101°F. for two or more days. The most frequent findings were homogeneous triangular shadows near the cardiophrenic angles and single or multiple opacities in any portion of the pulmonary field. Lateral views revealed frequent involvement of the right middle lobe. Evidence of pulmonary involvement occurred whether the clinical course was mild, moderate or severe. However, among patients with pulmonary consolidation, the percentage of those moderately or severely ill was high. Of the afebrile group, one-third showed increased markings and one-quarter pulmonary consolidation. The incidence of pulmonary infiltration was greater in patients who had fever, reaching 80 per cent in those with high fever. Lymphadenopathy was infrequent, especially in those with pulmonary consolidation. This finding was in keeping with the results found at autopsy. Hilar involvement was most frequent in those who showed no evidence of pulmonary consolidation. The authors believe that tenacious mucus and a narrow lobar bronchus contribute to the frequent atelectasis of the right middle lobe.—*Roentgenograms of the Chest Taken during Pertussis, J. L. Kohn, I. Schwartz, J. Greenbaum & M. M. I. Daly, Am. J. Dis. Child., June, 1944, 67: 463.*—(*K. R. Boucot*)

Acute Respiratory Conditions.—The authors endeavor to demonstrate the reaction by African soldiers to respiratory diseases as compared with the reaction of Europeans. The survey covers 1,250 admissions to the African Medical Division of an Army hospital. Three hundred and seventy-five of the admissions (30 per cent) were for respiratory infections. There were 76 cases of acute lobar pneumonia. Treatment was by oral administration of sulphapyridine and the response was more dramatic than in the European. However, in spite of the apparent rapid recovery, radiological examination proved that resolution was no quicker than in the European. The mean period of hospital stay was 21.8 days. There were 2 deaths. There were 12 cases of dry pleurisy with an onset of fever and chest pain and a dry rub on physical examination. No tuberculosis foci were seen on radiograms. There were 7 cases of pulmonary tuberculosis with positive sputum and definite lesions by radiogram. Six of the 7 had extensive exudative lesions with little evidence of restoration. Contrary to expectations, the incidence was found to be low and no case of "primary" tuberculosis was discovered. One case of lung abscess was admitted—he died within ten days of fulminating suppuration. There were 159 cases of bronchitis. They all responded to expectorants and inhalations and only required a few days in bed. The last group consisted of 67 cases of minor upper respiratory infections—coryza, pharyngitis, tracheitis and sinusitis. These were all admitted with a twenty-four-hour history of fever and responded well. The author concludes from this survey that there is clear evidence that the African is much more susceptible to acute respiratory infections in the Tropics than the Europeans. However, their response to treatment is uniformly good.—*An Analysis of Acute Respiratory Conditions in African Soldiers, W. W. MacNaught & R. M. Murray-Lyon, Brit. M. J., September 11, 1943, 2: 324.*—(*D. H. Cohen*)

Chronic Bronchitis.—Noting the apparent high incidence of severe acute bronchitis with chronic features among military units in Panama, the author studied many such cases,

40 in detail. Only 4 of the 40 had previously had dusty occupations. Seventy per cent gave past histories of recurrent attacks of bronchitis characterized by cough with or without wheezing, occurring mainly in winter or with weather changes; many of these had experienced in addition sinusitis, hay fever and urticaria. One patient had suffered from severe sinusitis without bronchial involvement. The remainder gave no histories of previous bronchial or nasal disease. Among those with significant past histories there was almost a universal marked increase in severity and persistence of bronchial symptoms on arrival in Panama. Those without such histories developed symptoms within the first twenty-seven months, the average onset being one year after arrival. Symptoms are those of tracheobronchial irritation and of bronchiolar obstruction; they were more severe during damp weather and usually persisted throughout the patients' stay in Panama. Rhonchi were the commonest physical finding. Chest X-ray films typically were normal, save for increased basilar markings in 25 per cent. Bronchograms on 8 patients were not abnormal; and of 8 bronchoscopic examinations, 3 were normal and 5 showed bronchial mucosal thickening and edema and abundant secretions. Material for allergy studies was not available but a moderate eosinophilia was noted in 3 patients. Vigorous treatment of demonstrable possible causes rarely did more than lessen the signs and symptoms so that all 40 patients were eventually transferred from Panama. They could not, of course, be followed by the author, but he pointed out that previous experiences indicated 50 per cent of such cases usually improved on embarkation from the tropics with the remaining 50 per cent improving after reaching the United States, some recovering completely. From this study and others, the author concludes that primary chronic bronchitis is a clinical entity recognized in early stages as recurrent acute bronchitis, with successive attacks becoming more severe and prolonged until the final stage sets in when the patient is rarely free from symptoms. Emphysema often results from it but bronchiectasis is a separate entity and not a sequel to bronchitis. He believes that predisposing factors are not well understood but may include exposure to dust, bronchial damage from previous acute infections, allergic conditions and chronic sinusitis. He believes further that in susceptible persons the most important precipitating factor is climate, particularly dampness.—*An Early Form of Chronic Bronchitis in Panama, A. G. Cohen, War Med., February, 1944, 5: 105.*—(*L. R. Roll*)

Respiratory Tract Infections.—In the first year of World War II the morbidity rate from respiratory infections caused by the hemolytic streptococcus increased markedly. The man-days loss in the Navy and the financial expenses for common diseases caused by the hemolytic streptococcus were high. A control program to check the dissemination of respiratory pathogens was instituted in several naval training stations in December, 1943. Comparable groups of untreated persons were observed for three months. In a camp with a severe, well advanced outbreak of streptococcic infections a prophylactic regimen of sulfadiazine 1 g. daily was instituted. It was followed by a rapid, contraseasonal decline in streptococcic infections and by a drop in incidence of rheumatic fever. Following the outbreak of a scarlet fever epidemic in another camp one-half of the complement was put on a prophylactic dose of 1 g. of sulfadiazine daily. The incidence of infection with hemolytic streptococcus, group A, type 19 which had caused the outbreak of scarlet fever was much lower in the group undergoing the prophylaxis. At a camp with complete turnover of personnel within short periods the incidence of respiratory infections in a group receiving 0.5 g. of sulfadiazine daily was much lower than in the control group. The only untoward effects of mass sulfadiazine prophylaxis were the occurrence of a drug rash in 0.5 per cent and serious constitutional disturbances, exfoliative dermatitis and agranulocytopenia, in 0.01 per cent of the entire group of 30,000 men. Drug fastness was not observed during the first four

months of the prophylaxis program.—*The Prevention of Respiratory Tract Bacterial Infections by Sulfadiazine Prophylaxis in the United States Navy, A. F. Coburn, J. A. M. A., September 9, 1944, 126: 88.*—(*H. Abeles*)

Pulmonary Catarrh.—The varying manifestations of recurrent nonspecific respiratory infection occurring especially in childhood allow for numerous names and diagnoses being given. Most of these numerous chronic or subacute infective pulmonary conditions could more satisfactorily be grouped together under the term "chronic pulmonary catarrh." The author found that, in 63 children under fourteen years of age referred to his asthma clinic, only 12 cases fit the picture of true allergic asthma—the remaining 51 were examples of chronic pulmonary catarrh. In a further series of 38 children seen in private practice, 33 showed evidence of recurrent catarrhal infections of the respiratory passages, only 5 being cases of true allergic asthma. The clinical features vary. In some children the attack is mild and is referred to as a bronchial cold with slight pyrexia and cough; in others the asthmatic features are predominant, with labored wheezy breathing and prolonged difficult expiration. In another group, a mild pneumonia attack seems to occur. The duration and termination also vary considerably, though the slowness of resolution and of disappearance of cough is most noticeable. The acute asthma picture often lasts several days and is followed by persistent wheezing and a cough, especially troublesome at night. Prolonged expiration is usual, but rapid shallow breathing is not uncommon. Râles and rhonchi may be heard anywhere, but especially posteriorly, and, significantly, they are almost always bilateral. Between attacks the child may be quite well, but one usually finds shallow breathing, poor development of the thorax as evidenced by round shoulders, flattening anteriorly and Harrison's sulcus, and coughing after deep breathing or exertion. Pharyngitis, large infected tonsils and postnasal catarrh may be seen. The latter conditions have been treated, but without the expected recovery. Radiograms of the chest reveal unduly heavy lung roots with increased striations radiating from the hilar region, especially to the lower lobes. Bronchography shows normal bronchi. The differential diagnosis lies between pulmonary tuberculosis, bronchiectasis and true allergic asthma. Treatment in the acute attacks is that of acute bronchitis, asthma or pneumonia, depending on the predominant features. The important thing is to reduce the frequency of the attacks and to limit the permanent damage that may result. A warm, dry climate is beneficial. Breathing exercises are of extreme importance to correct faulty posture and movement of the thoracic cage, to promote diaphragmatic movement, to increase respiratory excursion and resilience, and to improve expiration. Group teaching for respiratory exercises is used with good results.—*Chronic Pulmonary Catarrh in Childhood, A. B. Taylor, Brit. M. J., April 1, 1944, 1: 453.*—(*D. H. Cohen*)

Cold Vaccines.—An attempt was made to evaluate the effect of cold vaccines on the incidence of the common cold. The preparations used were two vaccines for hypodermic use and three vaccines for oral use, all furnished by manufacturing pharmaceutical firms. There were three control groups. One was treated with placebos orally, one with placebos subcutaneously and one group remained untreated. The experiment was carried out on office and industrial workers of ages from nineteen to sixty-eight years on five different locations in the October to April period. Observations were made as to the number of colds, number of working days lost by each group, number of colds per person, number of days lost per person and number of days lost per cold. No evidence was found that any of the vaccines used offered clearly effective prophylaxis against either the frequency or the severity of the common cold.—*"Cold Vaccines" and the Incidence of the Common Cold, L. C. McGee, J. E. Andes, C. A. Plume & S. H. Hinton, J. A. M. A., February 26, 1944, 124: 555.*—(*H. Abeles*)

Atelectasis in Poliomyelitis.—Smith called attention to the fact that one-third of patients who had been in respirators and who were discharged to orthopedic hospitals and to convalescent homes died with infections of the respiratory tract, reported in records as bronchopneumonia. Coryllos and Birnbaum emphasized the rôle of atelectasis in the development of pneumonia. Factors predisposing to the development of atelectasis in poliomyelitis are reduction of vital capacity due to decreased tonus of skeletal muscles of the body as a whole, and impairment of the cough mechanism. Case reports are presented on 4 patients who developed atelectasis after the acute phase of poliomyelitis had been passed. Three of the 4 were still in the respirator. The fully developed pulmonary complication presented a critical picture characterized by fever, dyspnea, cyanosis, tachycardia, impaired cough reflex and prostration. These symptoms were due to pneumonia superimposed on a basis of atelectasis. X-ray evidence is presented. Prophylaxis suggested is avoidance of respiratory infection, the administration of sulfonamides at the earliest sign of such infection, the early use of bronchoscopy and the establishment as the criterion for removal from the respirator the ability to cough instead of the ability to breathe freely.—*Atelectasis Complicating Acute Poliomyelitis with Involvement of Respiratory Muscles, M. Cooperstock, Am. J. Dis. Child., June, 1944, 67: 457.*—(*K. R. Boucot*)

Multiple Echinococcus Cysts.—Hydatid disease is most commonly encountered in areas where sheep pasturage prevails. Two cases of multiple echinococcus cysts are reported. The first case occurred in a sheep herder who complained of shortness of breath and chest pain. A chest roentgenogram revealed a large shadow in each lung field. Both shadows proved to be caused by echinococcus cysts on operation. The cysts were removed without complication. A follow-up examination three years after the operation revealed a normal chest roentgenogram and no respiratory symptoms. The second case occurred in a school girl who had close contact with dogs. An intraäbdominal echinococcus cyst was discovered at the occasion of an appendectomy. Subsequent examinations revealed a mass above the right diaphragm and abnormal contours of the spleen and of the liver as demonstrated with the aid of pneumoperitoneum. Several cysts of the liver and cysts closely attached to the uterus and to the spleen were removed through a thoracotomy and through a laparotomy at a later date. Several cysts of the liver had penetrated the diaphragm without invading the lung. They produced the supradiaphragmatic shadow on the chest film. The removal of the cysts was preceded by aspiration of about 30 to 50 cc. of the cyst fluid followed by injection of about 10 to 20 cc. of 10 per cent solution of formaldehyde. Then the contents of the cysts including the germinal layer were removed by suction. The wall of the cavity was wiped with the same solution and washed out with saline. Drainage or packing of the cavity is contraindicated, the remaining space may be filled with saline. Eosinophilia was not present in either case. The echinococcus skin test was positive in both patients; however, caution in its evaluation is advised since the test may be positive in the absence of hydatid disease.—*Multiple Echinococcus Cysts of the Lung, Liver and Abdomen, E. Holman & P. Pierson, J. A. M. A., April 1, 1944, 124: 955.*—(*H. Abeles*)

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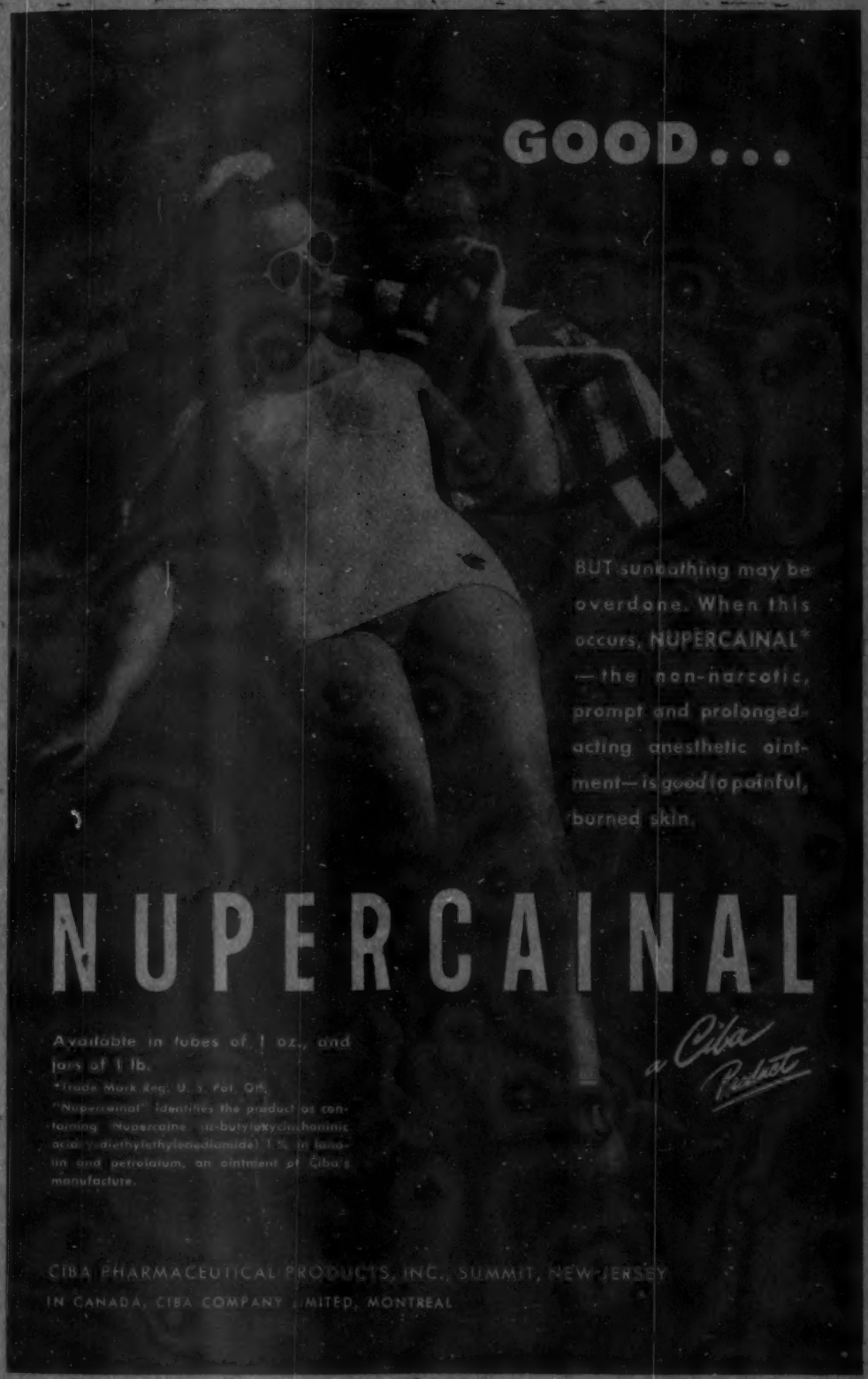
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